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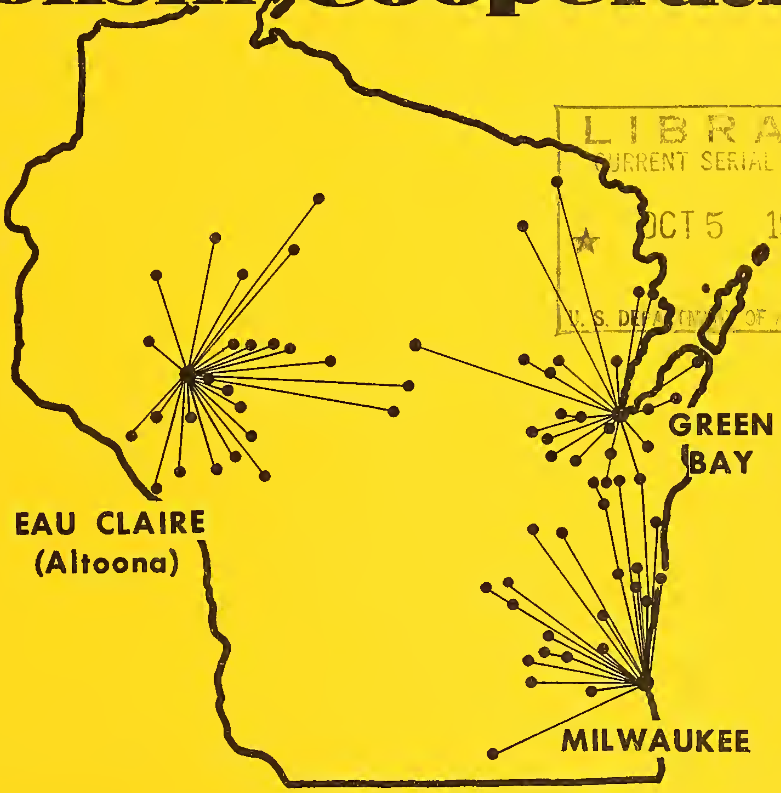
Losses of Livestock in Transit Among Wisconsin Cooperatives



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BY JOSEPH E. RICKENBACKER

FARMER COOPERATIVE SERVICE
U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON 25, D. C.

SERVICE REPORT 11

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FARMER COOPERATIVE SERVICE
U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON 25, D. C.

Joseph G. Knapp, Administrator

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The Farmer Cooperative Service conducts research studies and service activities of assistance to farmers in connection with cooperatives engaged in marketing farm products, purchasing farm supplies, and supplying business services. The work of the Service relates to problems of management, organization, policies, financing, merchandising, quality, costs, efficiency, and membership.

The Service publishes the results of such studies; confers and advises with officials of farmers' cooperatives; and works with educational agencies, cooperatives, and others in the dissemination of information relating to cooperative principles and practices.

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SUMMARY

Killing and crippling of livestock in transit is a matter of grave economic significance to the nation's livestock industries and to individual producers, transporters, and market operators alike.

This report is a pilot study on such losses, and its findings are a basis for future studies. It explores this nearly untouched field of research for the benefit of all those engaged in the meat industry. This first report analyzes loss and damage to livestock delivered by a number of cooperative shipping associations to three Wisconsin markets. It considers several factors which influence the frequency of loss and damage and offers a suggested educational program to eliminate their causes.

The statistical information is based on the records of shipments to the Equity Cooperative Livestock Sales Association at its offices in Milwaukee, Green Bay, and Altoona. Equity's livestock supply sources range from points close to the markets to others more than 100 miles distant. The animals move from farm to market through 86 local cooperative livestock shipping associations.

In 1952, Equity's combined receipts at the three markets totaled more than 215,000 head of livestock. This figure applied only to deliveries made by the 86 shipping associations. Of the 215,000 animals, 334 were crippled or dead on arrival at market. Thus, of the total receipts, about 15/100 of 1 percent represented an economic loss. Among Equity's three markets, incidence of death and crippling varied with the highest loss occurring at Milwaukee.

As the length-of-haul increased, the rate of death and crippling rose. Loss and damage of animals moved 90 miles or more to market was about six times greater than that incurred under 50 miles.

This crippling and killing of all species of livestock in transit was almost twice as high in winter and the colder months of early spring and late fall as in summer. However, in the case of hog shipments, loss and damage during August's extremely hot weather nearly matched winter losses, especially in hauls over 50 miles.

The combination of long hauls and unfavorable weather accounted for the highest numbers of death and crippling. This applied equally to all species of livestock.

Records of damage, however, varied considerably among individual shipping associations. They showed a few associations with a much higher percentage of dead or crippled animals in transit from equal distances than the average combined loss of all associations. This might have been due to such factors as loading and unloading facilities, type and condition of vehicle used, or to handling while on the road.

Since death and crippling of livestock in transit represent considerable economic loss, it is abundantly clear that all those producing, marketing, and processing meat animals should make a determined effort to reduce such losses. Improved loading and transit facilities and increased care in handling animals are prerequisites to loss reduction.

A suggested program for loss reduction is included in this report. It emphasizes precautions the livestock producer, trucker and marketer can take for immediate lessening of losses. It then proposes a long-time plan of research and education for solving difficult and unknown causes. It is suggested that the effective use of such a program by the livestock and meat industry might well result in a decided decline in transit loss and damage.

LOSSES TO LIVESTOCK IN TRANSIT
AMONG WISCONSIN COOPERATIVES

By

Joseph E. Rickenbacker
Transportation Branch
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Loss and damage to livestock in transit is a matter of grave concern to producers and shippers of meat animals as well as to those operating terminal markets and processing plants. Their yearly financial losses reach staggering proportions, with attendant far-reaching economic effects on the livestock and meat industries. In addition to the obvious loss through dead and crippled animals at time of slaughter, it is estimated that bruised animals alone represent an additional loss of about $50 million each year.

Since United States farmers market approximately 15 percent of their livestock through farmer cooperatives, these associations have a vital interest in the loss and damage problem. Particularly is this true among those cooperatives marketing a high proportion of the livestock handled at public yards.

In Wisconsin, for example, Equity Cooperative Livestock Sales Association, Milwaukee, handled about 25 percent of the volume at the Milwaukee stockyards. It also has two sizable branch markets at Altoona and Green Bay. The bulk of animals handled by Equity at these three markets come from some 200 local cooperative livestock shipping associations located throughout Wisconsin and in some sections of Michigan and Iowa.

This sales association and its various shipping cooperatives share the concern and interest common to the livestock industry for eradicating loss and damage to animals in transit. And although its yearly percentage of loss is small, such loss in dollar-and cent figures represents hundreds of dollars to individual farmer members. Other livestock markets and shipping organizations, however, may operate under different customs and different conditions of geographical or climate advantages. Their transit losses and causes will be presented in subsequent studies.

It is the purpose of this pilot report on Equity's transit losses on short highway hauls to provide a guide for studying other markets in this nearly untouched field of analysis. An examination of the loss and damage experience of the Wisconsin cooperative livestock sales association may be of value, then, to all livestock organizations with such losses.

Representatives of the Farmer Cooperative Service[1] visited each of Equity's three sales markets at Altoona (Eau Claire), Green Bay, and Milwaukee,

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[1] Robert J. Byrne, Raymond L. Fox, and French M. Hyre of the Farmer Cooperative Service, U. S. Department of Agriculture, did the field work in this study.

Wis. There they observed the livestock as it was received, examined the equipment used in transport, and consulted the association personnel. Discussions concerned possible causes of loss and damage as well as Equity's current activities in reducing loss and damage. These representatives then examined available records for (1) receipts of animals by species and by months; (2) percentage incidence of dead and crippled stock arriving at the market; and (3) points or origin of shipments received.

As a final aid in evaluating current findings, this study briefly uses a 1939 bulletin, one of the few analyses made on livestock losses in transit.

OBJECTIVES AND PROCEDURE

Specific objectives of the study were:

1. To determine the percentage of loss and damage to livestock incurred in transit from Equity's production centers or other shipping points to its markets.

2. To ascertain the influence of length-of-haul on Equity's rate of loss and damage to livestock.

3. To evaluate the possible effect of seasons on death and injury of livestock in transit.

4. To consider whether length-of-haul and seasonal factors operate as a combined influence on the rate of loss and damage.

5. To examine Equity's existing corrective devices and, on the basis of information developed, propose an effective program for eliminating or controlling loss and damage of livestock in transit, and thus reduce transportation and marketing costs.

LIVESTOCK RECEIPTS AND DAMAGE

Equity's receipts of all livestock from 86 shipping associations at the three Wisconsin markets totaled 199,121 head in 1951 and 215,319 head in 1952 -- the latest years for which complete figures were available. In each year, Milwaukee receipts represented somewhat over 45 percent of Equity's combined total. The remaining 55 percent were divided between Green Bay and Altoona on about a 3 to 2 ratio.

The Altoona and Green Bay sales markets are situated so that their livestock may be trucked in without extensive routing through congested city traffic. At Milwaukee, however, the public stockyards are located in an industrial area reached through considerable traffic.

While the three yards handle all species of livestock, they specialize in marketing calves and hogs. These two species account for about 80 percent of the total receipts that Equity handles. The Milwaukee market sells most of Equity's hogs, while Green Bay and Milwaukee market about the same number of calves. The Public Stockyards at Milwaukee is the largest calf market in the nation for all livestock organizations. Table 1 below shows the numbers and species of livestock marketed by Equity Sales Association at the three markets.

Table 1. - Receipts of livestock from 86 shipping associations by Equity Cooperative Livestock Sales Association, 1951-52.

Markets	Head of Livestock Received							
	Cattle		Calves		Hogs		Sheep	
	1951	1952	1951	1952	1951	1952	1951	1952
Altoona	8,173	9,564	15,550	19,519	16,952	17,354	1,795	2,040
Green Bay	11,110	10,738	38,036	38,363	15,706	19,279	1,221	1,438
Milwaukee	14,129	13,888	35,957	38,432	37,799	41,720	2,693	2,966
Total 3 markets	33,412	34,190	89,543	96,314	70,457	78,371	5,709	6,444

Dead and crippled animals received at the three markets totaled 341 head in 1951 and 334 head in 1952. As shown in Table 2, hogs account for over 60 percent of the total loss each year. In 1951 the calf loss accounted for about 70 percent of the remaining number of losses and about 85 percent in 1952. The overall loss for all species at the combined markets was 17/100 of 1 percent in 1951 and about 15/100 of 1 percent for the later year.

Table 2. - Receipts of dead and crippled animals from 86 shipping associations by Equity Cooperative Livestock Sales Association, 1951-52.

Markets	Dead and crippled animals received							
	Cattle		Calves		Hogs		Sheep	
	1951	1952	1951	1952	1951	1952	1951	1952
Altoona	5	0	10	11	23	28	0	0
Green Bay	0	0	6	10	2	14	0	5
Milwaukee	11	5	79	92	194	164	11	5
Total 3 markets	16	5	95	113	219	206	11	10

The figures in tables 1 and 2 show the varying loss experience among the markets. The ratio of dead and crippled animals to total receipts is considerably higher at Milwaukee than at the other markets, and the ratio at Altoona is much higher than at Green Bay. Reduced to percentage figures, the variation is more clearly shown, as follows:

	1951	1952
Green Bay	.01%	.04%
Altoona	.09%	.08%
Milwaukee	.33%	.27%

The overall percentage of dead and crippled receipts at the combined markets was 17/100 of 1 percent for 1951 and 15/100 of 1 percent for 1952. Part of the higher losses evident in Milwaukee yards may stem from trucking the animals through transit hazards to the yard's industrial area.

This and other causes of livestock loss and damage are discussed in the following sections.

RELATIONSHIP OF LENGTH-OF-HAUL TO LOSSES

Data gathered for this report indicate that length-of-haul has a direct bearing on livestock damage. In 1952-53 the three markets received stock from 86 different shipping associations, which were as near as 2 miles and as distant as 188. The map of the associations on the cover shows the geographical relationship of the shipping points to the three markets. Each market has about the same number of associations supplying it with livestock. One differs from another only in the number of short or long distance shipping points. The difference in distance is listed in Table 3 below.

Table 3. - Number of associations shipping to three Equity Markets, 1951-52 by mileage from point-of-origin to market.

Markets	Total shipping to market	Number of associations shipping			
		Under 50 miles	51-70 miles	71-90 miles	Over 90 miles
Altoona	30	16	9	1	4
Green Bay	25	18	2	1	4
Milwaukee	33	10	5	3	15
Total	1/88	44	16	5	23

1/ 86 different associations represented. Two associations shipped to two different markets.

The shipping associations using the Altoona and Green Bay markets for the most part are located at relatively short distances from these two markets. On the other hand, the Milwaukee market receives over half of its receipts from more distant associations.

While the actual number of associations and their proximity to market affect the problem of loss, it is the relationship between volume of shipments and their length-of-haul which concerns the Equity family of cooperatives. This relationship, for example, is apparent in the higher frequency of dead and crippled animals received at Milwaukee from a large number of distant associations (table 2 on page 3).

To analyze the length-of-haul of livestock shipments received at the three Wisconsin markets, we have grouped the various shipping points according to their distance from market, in 11 blocks of 10 miles each. The eleventh block was added to embrace shipments traveling in excess of 100 miles. For example, the distance from Kewaunee to Green Bay is 28 miles. Shipments moving between these two points, therefore, are reported in the 21 to 30 mile block.

All deliveries of livestock to each of the three markets made during the calendar year 1952 have been assigned appropriate mileage blocks in figure 1. This figure treats the receipts of the markets collectively, showing the distribution of 215,319 head of stock by mileage blocks.

The volume of receipts increases rather steadily block by block through the 41 to 50 mile block, with the largest receipts lying in the 21 to 30 and 41 to 50 blocks. After this point, the receipts decline sharply for the next four blocks of 40 miles. A second "break" occurs after 70 miles, followed by a definite upward spurt at 90 miles. Thus, a natural grouping of three occurs; (1) livestock shipments from points under 50 miles from a given market; (2) those between 51 to 70 miles; and (3) shipments from points 91 or more miles distant.

Figure 1 indicates that about 51 percent of all animals received travel less than 50 miles to market; an additional 21 percent travel between 51 to 70 miles; and 23 percent in excess of 90 miles (table 3 on page 4).

Figure 2 shows the differences in length-of-haul between the combined shipments of Altoona and Green Bay on the one hand, and Milwaukee on the other. Milwaukee received about 42 percent of its livestock from points located more than 90 miles distant; the combined markets slightly under 8 percent. From origin points under 50 miles, the two markets received about 65 percent of their supply; Milwaukee only some 35 percent. These findings are in line also with the data previously tabulated in Table 3 and referred to in the paragraph above.

During 1952, 334 dead or crippled animals were received at the three Wisconsin markets. Of the total receipts, this represents almost 16/100 of 1 percent. Although this percentage may seem low, it does represent a loss of potential income which is inevitably borne by the producer. And to each individual producer who losses cattle, hogs, sheep or calves, it means substantial losses.

Damage which results in the crippling or death of the animal is usually assumed to occur in transit. However, happenings back on the farm or ranch, preparation for market, loading for shipment, and unloading at market may be closely related to the losses sustained.

With the mileage block procedure, we have now established a relationship between length-of-haul and loss and damage to livestock transported to market. The results are illustrated in figures 1 and 2. Figure 1 dealing with total receipts of the three markets indicates a trend toward greater loss and damage as length-of-haul increases. The increase is demonstrated through virtually all blocks, although slight deviations do occur. These loss and damage groups for Equity's combined receipts follow:

27% loss up to 50 miles (Total receipts included in 0-50 block--51%)
20% " 51 to 90 " (" " " " 51-90 " --26%)
53% " over 90 " (" " " "over 90 " --23%)

No dead or crippled animals were received from points located less than 10 miles from the terminating market. The Milwaukee market, with its larger receipts from more distant supply sources and attendant high loss and damage, confirms the trend noted. The positive relationship between loss and damage to stock and the distance transported is dramatically clear when the study shows over 53 percent of dead and damaged animals occuring among only 23 percent of the animals. These are the livestock moved over 90 miles to the three markets.

The distribution of loss and damage by mileage blocks does not follow the same pattern in the Altoona - Green Bay markets as in Milwaukee. Figure 2 contrasts relationship of loss to distance hauled in percentages of total receipts. For example, while nearly 6 percent of all dead and crippled animals received at the Altoona-Green Bay markets occurred in block 11 to 20, Milwaukee's loss here was only a little over 1 percent.

Figure 2 also indicates the following: (1) The highest percentage of losses occur in the longer distance blocks at Milwaukee, (2) At all three markets, the percentage of losses in shorter distance blocks runs below or closely parallels the percentage of all animals received in those blocks, while in the longer distance blocks the loss percentages based on total receipts run far ahead of percentages of total animals received. This, of course, lends proof to the theory that the greater the distance the more damage results. (3) There is, as might be expected, some relationship between total receipts and losses in each block; that is, the higher the total receipts, the higher the rate of loss. This further explains the first conclusion above, (aptertaining to Milwaukee) and substantially accounts for the difference in the distribution of losses between the markets.

The combined markets' loss experience in the various mileage blocks pictures the overall relationship between loss and damage and length of haul, as shown in figure 3. Against these total receipts (expressed in thousands of head of livestock) in each mileage block is pinpointed the percentage of such receipts arriving at the markets dead or crippled. That greater length of haul has a direct bearing on rising losses is clearly indicated by the upward trend of the loss line from block 0 to 10 to a high in the blocks 91 to 100 and over 100. Actually, from four to ten times as many head of livestock were handled in the lower blocks for each dead or crippled animal as were handled in the blocks representing distances over 90 miles.

Up to this point, no difference between species of livestock has been made in the analysis.

Table 4 shows the combined mileage distribution of each specie with its numbers of loss and damage. This is expressed as percentages of the totals for 1952.

Table 4 indicates that none of the four species of livestock deviated from the overall casualty trend. In each case, the longer distance blocks have the higher incidence of loss and damage, and each specie's total loss is consistent with the overall loss. The sheep and cattle losses were small in comparison with hogs and calves, but even here the pattern of loss is similar.

Table 4 also shows that cattle and sheep losses run much lower than hog and calf losses in the three markets and in shorter distance hauls are not a serious problem.

Figure 4 graphically compares the percentage of dead and crippled animals (by species) with each specie's total receipts from points lying within the 11 mileage blocks. Here again the frequency of specie loss and damage rises with increased length-of-haul, except for cattle. But this

Table 4. - Receipts of various species of livestock with percent of total dead or crippled, by mileage blocks at three Wisconsin markets, 1952.

Mileage Blocks	Cattle		Calves		Hogs		Sheep	
	Percent total cattle received	Percent total dead or crippled	Percent total calves received	Percent total dead or crippled	Percent total hogs received	Percent total dead or crippled	Percent total sheep received	Percent total dead or crippled
0 - 10	3.1%	--	2.4%	--	1.6%	--	5.2%	--
11 - 20	6.5	--	6.5	4.4%	4.1	1.0%	1.5	--
21 - 30	11.6	--	14.9	4.4	16.2	7.3	7.6	--
31 - 40	11.2	--	12.5	7.1	13.0	10.7	5.0	--
41 - 50	19.1	--	17.5	5.3	15.3	10.7	8.1	30%
51 - 60	8.9	--	11.7	2.7	7.0	3.0	15.1	10
61 - 70	9.1	--	8.0	13.3	12.8	14.6	12.8	--
71 - 80	5.4	--	5.5	2.7	4.0	4.4	6.0	--
81 - 90	.9	20%	1.1	--	.4	--	.1	--
91 - 100	12.3	20	9.5	29.2	12.4	22.3	27.8	40
Over 100	12.1	60	10.5	31.0	13.1	26.2	10.2	20

exception, in reality is not entirely valid since no loss in cattle is reported for hauls under 80 miles. The upward trend is quite discernible for all the others, the hog pattern being particularly well-defined.

On the basis of this chart, we can conclude that (1) the increased casualty trend for longer distances is roughly the same for all species of livestock, and that (2) hog and calf losses occur in higher numbers on shorter hauls than do losses of cattle and sheep.

SEASON VARIATIONS IN LOSS AND DAMAGE

Marketing livestock is a year-around business. This poses the question of whether seasonal variations affect loss and damage of livestock in transit. Climatic conditions, for example, could well be a factor in Wisconsin, since the State does have rigorous winters as well as occasional days of high temperature in summer. We have, therefore, considered seasonality as a facet of this livestock loss problem.

Figure 5 shows the total 1952 receipts of all livestock species at the three Wisconsin markets according to their delivery months at markets along with the total monthly number of dead and crippled animals received. The percentage of the year's total receipts of livestock varies from a low of 5 percent in August to a high of nearly 11 percent in April. Although there are substantial receipts 12 months of the year, lowest receipts occur during June, July and August. This lull is sandwiched between the down trend beginning in May and the upturn in October.

The monthly number of dead and crippled receipts follows the above general pattern since increasing and decreasing volumes of receipts result in parallel loss fluctuations. However, weather alters the loss pattern somewhat, causing higher percentages of loss and damage during the severly cold months of November through February, and lower percentages in the warmer months (except August) when the percentages run below the comparable total receipt figures. (Figure 6)

Thus, when we compare the monthly distribution data with the number of dead or crippled animals received, we find that climate does influence loss and damage considerably.

We have already observed the greater loss and damage in the transportation of calves and hogs than in cattle and sheep on short hauls. The apparent susceptibility of calves and hogs to crippling, and perhaps subsequent death in transit, cannot be explained by weather conditions since seasonal loss follows the same pattern for all four species. The only exception is the likelihood of greater damage to hogs in extremely hot weather. This can be seen in figure 7 which indicates that the percentage of hogs dead or crippled in August was as great as that in winter months. For all other species, the higher losses in winter and lower losses in summer prevail.

SEASONAL FACTORS AND LENGTH-OF-HAUL

The analysis of receipts of all livestock species at the Milwaukee, Green Bay, and Altoona markets results in two conclusions: (1) loss and damage to animals in transit rise as the distance from shipping point to market increases, and (2) a higher incidence of crippling and death occurs during the colder months. The combined influence of seasonal factors and length of haul would show most clearly if the total dead and crippled receipts were charted for each of the 11 mileage block by months. The highest rate of crippling and killing would show on long distance blocks during winter months. For example, of livestock moved more than 100 miles, about 60 percent of the loss occurs between November and March. This emphasizes the need for added precaution in the scheduling and handling of long-distance winter shipments to avoid these greater losses.

VARIATION IN FREQUENCY OF DEATH AND CRIPPLING

Statistics of the three Wisconsin markets presented thus far have not indicated the individual loss experience of the 86 associations, but represent either their collective loss and damage or the loss experience of those associations shipping to one of three markets. Some of these individual shipping associations are large supply sources, while others ship few animals. For example, one association supplying the Milwaukee market shipped 9,557 head in 1952; another only 566.

The local association makes the arrangements for moving livestock to market. In some cases, independent truckers contract to ship the stock; in others, local associations operate their own vehicles. This decentralized control of transportation facilities along with great volume differences of associations' shipments probably accounts for the variation in loss and damage among the several associations. The variation in loss experience in 1952 is shown in Table 5.

Table 5. - Loss experience of 86 cooperative livestock shipping associations in Wisconsin, 1952.

Number of associations reporting dead or crippled animals

- Losses -

0	1	2	3	4	5	6	7	8	9	10	11-15	16-25	26 or more
37	13	5	2	2	6	7	0	2	1	2	4	2	3

To illustrate the difference in loss experience among shipping associations, let us compare the loss rating of a given association with the rating of all associations falling within one of the analyzed "mileage blocks".

Table 6. - Loss variations of 4 selected shipping associations in a given mileage block.

Blocks	A	B	C	D
Selected associations	.56%	.70%	.70%	.48%
Average for block	.21%	.34%	.34%	.36%
Difference	.35%	.36%	.36%	.12%

Although the above associations selected for contrast in Table 6 show high loss and damage, others in the same mileage blocks had no losses. Thus, we may conclude that a "personal" factor determines in some degree the loss and damage. No doubt this can be traced to loading or unloading equipment, vehicles, yarding facilities and their uses as well as transportation methods.

COMPARISON WITH PREVIOUS STUDIES

These problems of loss and damage to livestock in transit are not new. Previous studies and programs have sought solutions to them. However, our conclusions in this study are difficult to measure by earlier studies, because of differences in standards and techniques and revolutionary changes in transit practices. The few earlier studies on transportation losses were made before livestock shipments were diverted from rail to truck, a change that brought profound effects on marketing meat animals.

This is true of Minnesota Bulletin 342, published by the Agricultural Experiment Station of the University of that State in 1939, which deals with the death and crippling of livestock in the marketing stage from 1910-37. 2/ A large segment of the study is concerned with damage incurred after arrival and unloading at the market as well as rail transportation. None of these aspects can be used for comparison since only truck receipts are included here and no data has been obtained relative to losses occurring after arrival at the market. The data contained in the Minnesota study are, however, treated both from the mileage or length-of-haul standpoint and from the standpoint of seasonal variation - which is useful for comparative purposes here.

The study reported roughly the same results on seasonal loss, with frequency of death and crippling much higher in winter months and in the early spring as well as late fall. It also gave somewhat the same increase in hog losses in hot weather - but primarily applied to rail shipments. The conclusions reached were similar in both studies -- that is, the rate of loss and damage rose as the length-of-haul increased. However, the Minnesota study used a 50-mile block system, which blurred the comparisons to some extent. Its only apparent deviation showed up in a higher rate of damage to cattle in the short hauls. However, in distances over 100 miles the rate rose above that in this study's 51-100 mile zone.

In its comparable material and analytical method, the Minnesota report showed about the same conclusions as this study.

A SUGGESTED EDUCATIONAL PROGRAM

A program to curtail loss and damage to livestock in transit should be directed toward producers, transporters, and marketers alike. In its entirety, the program should be useful to those who have an interest - direct or indirect - in all phases of the livestock industry. At the same time, it should be so constructed that those interested in only one phase of the livestock industry can make effective use of that particular portion of the program.

2/ Dowell, A. A., and Eggert, R. J., 1939. Death and Crippling in Livestock Marketing. Agri. Exp. Sta., Univ. of Minn., Bulletin 342.

The following suggested program was projected to meet these criteria with the hope that its adoption by the livestock industry, in general, might reduce loss and damage to animals in transit.

The effectiveness of the program would probably depend on how it was accepted and carried out. We would expect the best results when the entire program or a given segment of it is made a part of the operating policy of those engaged in the various facets of the livestock industry. For example, a trucking concern moving livestock from feed lots to market could enforce the program by making the transportation section an integral part of the company's operating procedure. Similarly, a livestock producer could incorporate the producers segment of the program in his ranching or feed-lot activities.

On the other hand, the program might be most effective if it were adopted as an educational program by such large cooperative livestock associations as Equity or by such organizations as 4-H Clubs, State extension groups, or general associations of farmers, truckers, railroad livestock departments. In any case, the success of the program or any part of it depends on the publicity given it, the effectiveness of its presentation, and most of all, the degree of its adoption by those who stand to benefit by it.

PRODUCERS

Livestock producers usually seek to protect themselves from loss or damage by insuring their animals for the haul from farm to market. This insurance may be arranged through regular casualty companies or, in the case of cooperatives, by contributions to so-called "sinking funds". Unfortunately, too many producers do not realize that the cost of this protection is based on loss experience. More importantly, they fail to consider the influence which their own handling and loading practices have on the cost of protection. Any loss reduction program will do well not only to arouse the producer's concern with insurance or sinking fund charges, but also to demonstrate that faulty practices result in unnecessarily higher charges for this protection.

Producers also lose money when they receive lower prices at market for damaged animals. But bruise damage, which may not be detected until after slaughter, represents a loss to the processor. Producers, therefore, should recognize that their subsequent shipments might bring below market prices since buyers usually discount stock from a producer with a record of bruise loss to the processor. Likewise, direct buyers will be inclined to discount purchases made at the ranch of a producer whose shipments usually show loss or damage on delivery. In many cases, the producer with a record for delivering stock with high rate of damage finds himself a "last resort source" - one to be utilized only when the buyer is "hard put" to obtain meat supplies.

Assuming that the animals to be marketed are in good condition at the time of shipment, the producer can do much to assure that his animals arrive at market in the same condition. In preparing the animals for shipment, he should do these things:

1. Assemble livestock for shipment in such manner as to avoid over-excitement. Sorting and assembling a day in advance of actual shipment is desirable.

2. Take care to prevent livestock from over-eating or drinking immediately prior to shipment. Such a practice helps to prevent death or injury in transit. It may be less expensive to pay the cost of a "fill" at the stock yards.

A great deal of damage to animals (especially bruise damage) occurs during the actual loading of the stock into vehicles for transport. Larger producers should construct permanent loading facilities which meet the best standards. If only temporary or make-shift facilities are available, then utmost care --and, particularly, more time-- should be used in loading. Then animals are not excited or rushed, with subsequent injury resulting. The producer who lacks proper loading facilities may avoid the risk of make-shift facilities by hiring a trucker with good portable loading equipment. In any case, the use of clubs, canes, and whips should be avoided while assembling and loading livestock. These devlces can and do bruise animals and thus reduce their market value.

When "for hire" trucking is used, the producer is able to exert influence over his loss possibilities. Choosing the trucker is of paramount importance. Frequently, other producers or the marketing agency will be able to give some information on truckers' loss records. Certainly, the producer should make a thorough inquiry before he contracts for the hauling of his stock. Regardless of the trucker selected, there is every reason for the producer to demand that the trucker handle his stock carefully. In all too many cases, the producer fails to insist on care and caution and as a result, he may sustain avoidable losses.

TRANSPORTERS

The responsibility of transporters (and here reference is made particularly to truckers) usually extends from loading the animals at the ranch or feed lot, through the over-the-road haul, and ending when the stock is unloaded at market. The trucker normally protects his vehicle with casualty insurance coverage but the lading may be covered otherwise. In the case of livestock, the cost of insuring the lading is usually passed on to the producer. However, the trucker is nonetheless concerned since the rate paid by the producer is based on each trucker's loss experience. The trucker, therefore, should hold his losses to a minimum or producers, penalized by his higher insurance rates, will turn to competitive carriers.

The program should offer some practical suggestions on trucker equipment for preventing bruises and injury to livestock. Truckers should:

1. Remove all protruding nails, wire or sharp projections from the interior of the truck body.

2. Furnish adequate sand or straw beeding to prevent animals from "spreading" or otherwise becoming "downers".

3. Provide for proper ventilation control to keep animals as near proper temperature as possible.

4. Provide sturdy partitions for use in segregating different species or sizes of animals or those which are not de-horned.

5. Ascertain that vehicle is in good running order before beginning a trip so that breakdowns and delays en route may be avoided.

6. Provide proper portable loading equipment.

Much of the damage to livestock in transit can be traced to loading and handling. To maintain a creditable loss rating, a trucker should observe these rules in loading and handling the animals entrusted to his care:

1. Load carefully - every precaution should be taken to avoid exciting or injurying the animals by using canes or clubs to rush them into the truck.

2. Use partitions freely, both for segregating animals and for reducing excess space in the truck. While animals should not be over-crowded, greater likelihood of injury arises when they are able to move around in the truck.

3. Avoid over-loading. Test-proven recommendations for safe loads are readily obtainable. These recommendations, based on the species of animals and the size of truck body, can be adapted to meet special circumstances.

4. Inspect the load at frequent intervals en route. Any necessary adjustments in ventilation should be promptly made.

5. Drive carefully, avoiding sudden stops, starts, or swerving on curves.

6. Unload carefully, using the same caution that is used in loading.

MARKET AND OTHER RECEIVERS

After livestock is received at a market or at the processor's pens, further precautions are necessary. Here again, prudence and care should be the watchwords if subsequent injury is to be avoided. The suggestions made for producers and transporters apply equally well to handlers during this last stage of the marketing process. It is suggested that when animals are received in a damaged condition, the consignee ought to examine the vehicle for the probable cause and question the driver. In this way, the causes of damage can be determined and corrections suggested. This action on the part of the consignees would be a real service to producers and would serve to promote safe transportation practices.

RESEARCH PROGRAMS

The above program suggested for producers, transporters, and marketers can bring immediate results. However, such problems as those involving weather or long-distance losses, will require research and study. This may be done by larger groups or associations of livestock interests or by other agencies - governmental or otherwise. It is suggested that research programs might consider such problems as these:

1. The comparison of loss and damage incurred in truck transport and rail transport.

2. The loss influence of vehicle types and conditions.

3. Effects of climate on death and crippling.

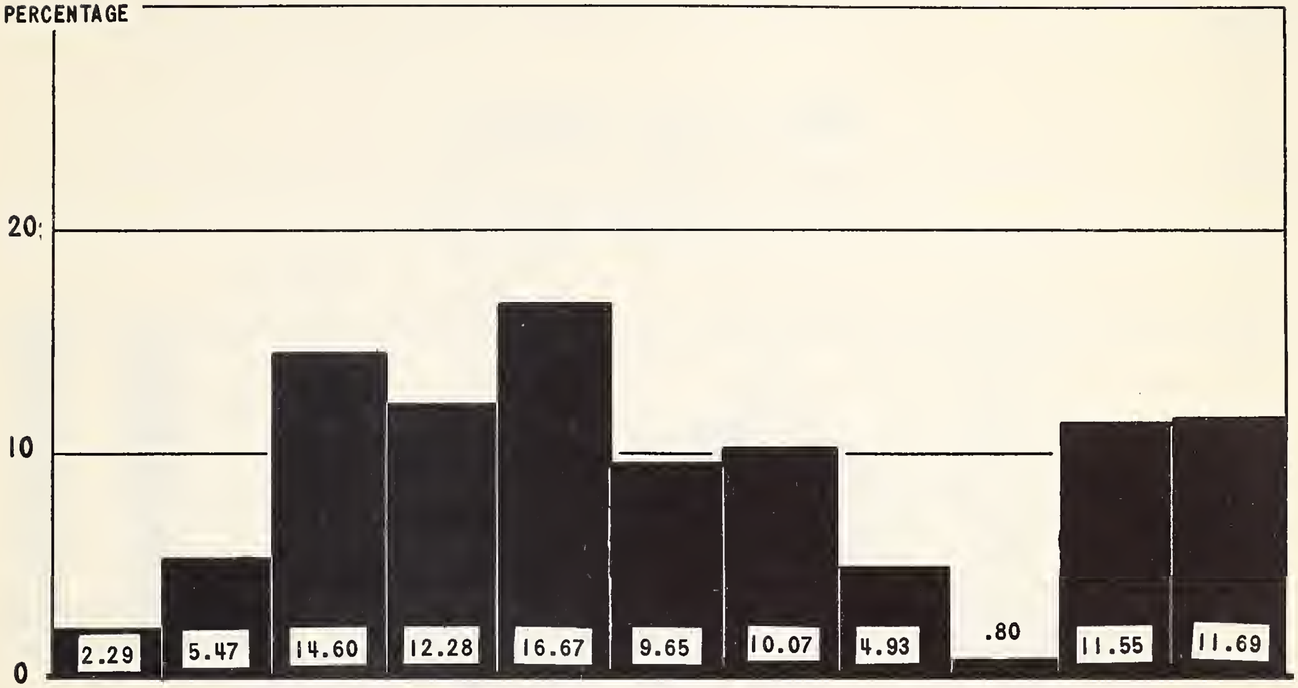
4. The significance of distance and terrain traversed on transit losses.

Such a research program conceivably could produce answers to many problems with far-reaching effects in loss reduction. Certainly, research could supply the ammunition (in the form of proven conclusions) for the fight against livestock losses and persuade livestock interests to adopt such a program as outlined.

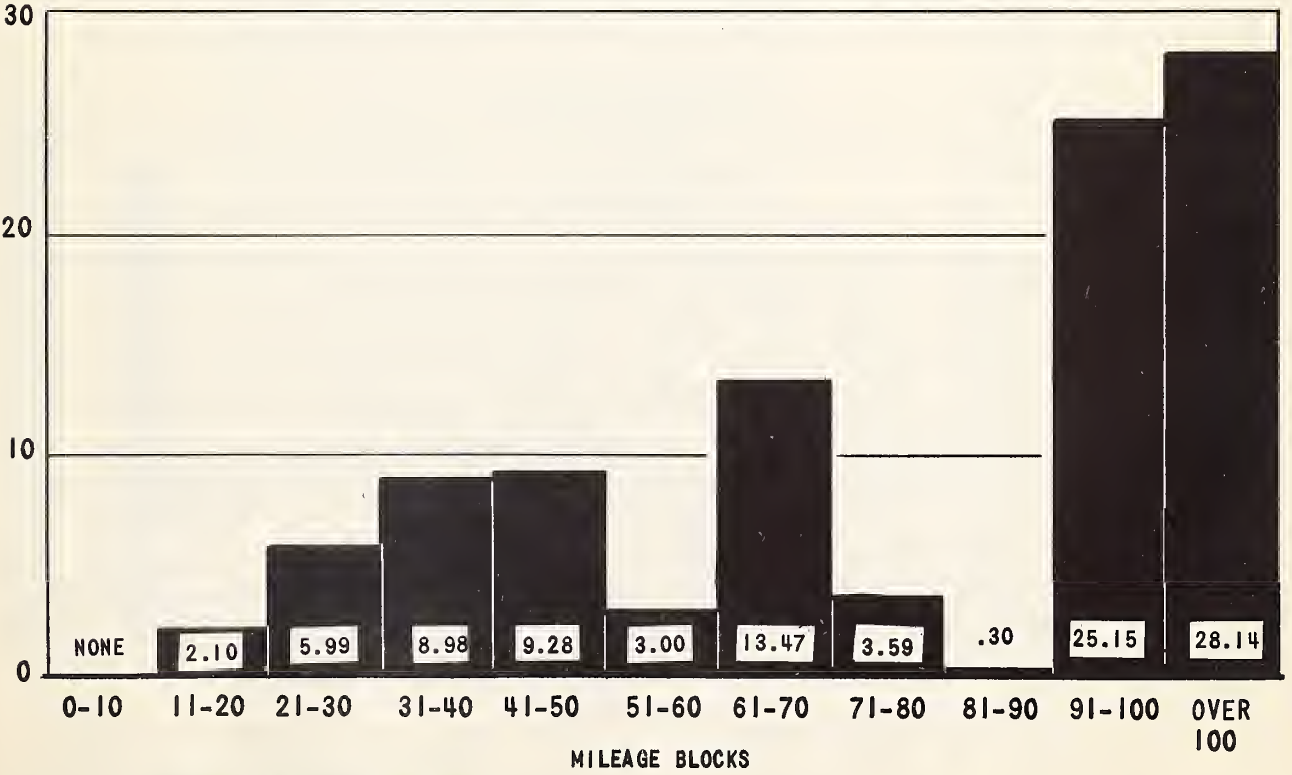
FIGURE I

COMPARISON TOTAL RECEIPTS ALL SPECIES LIVESTOCK AND INCIDENCE DEAD AND CRIPPLED ANIMALS - 1952*

TOTAL RECEIPTS, ALL SPECIES LIVESTOCK (215,319 HEAD)



TOTAL DEAD AND CRIPPLED ANIMALS (334 HEAD)

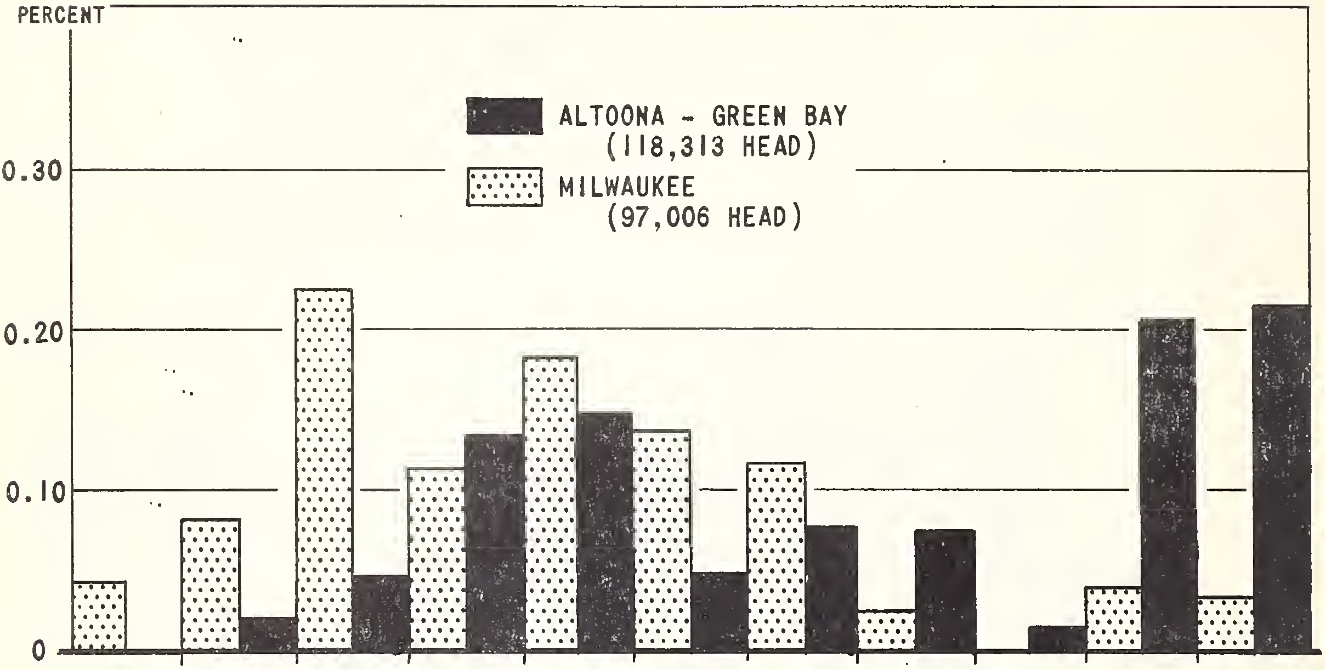


*3 WISCONSIN MARKETS COMBINED

FIGURE 2

COMPARISON OF LIVESTOCK RECEIPTS AND LOSSES BY MILEAGE BLOCKS, 1952
MILWAUKEE vs. ALTOONA—GREEN BAY

TOTAL RECEIPTS, ALL SPECIES LIVESTOCK



TOTAL DEAD AND CRIPPLED ANIMALS

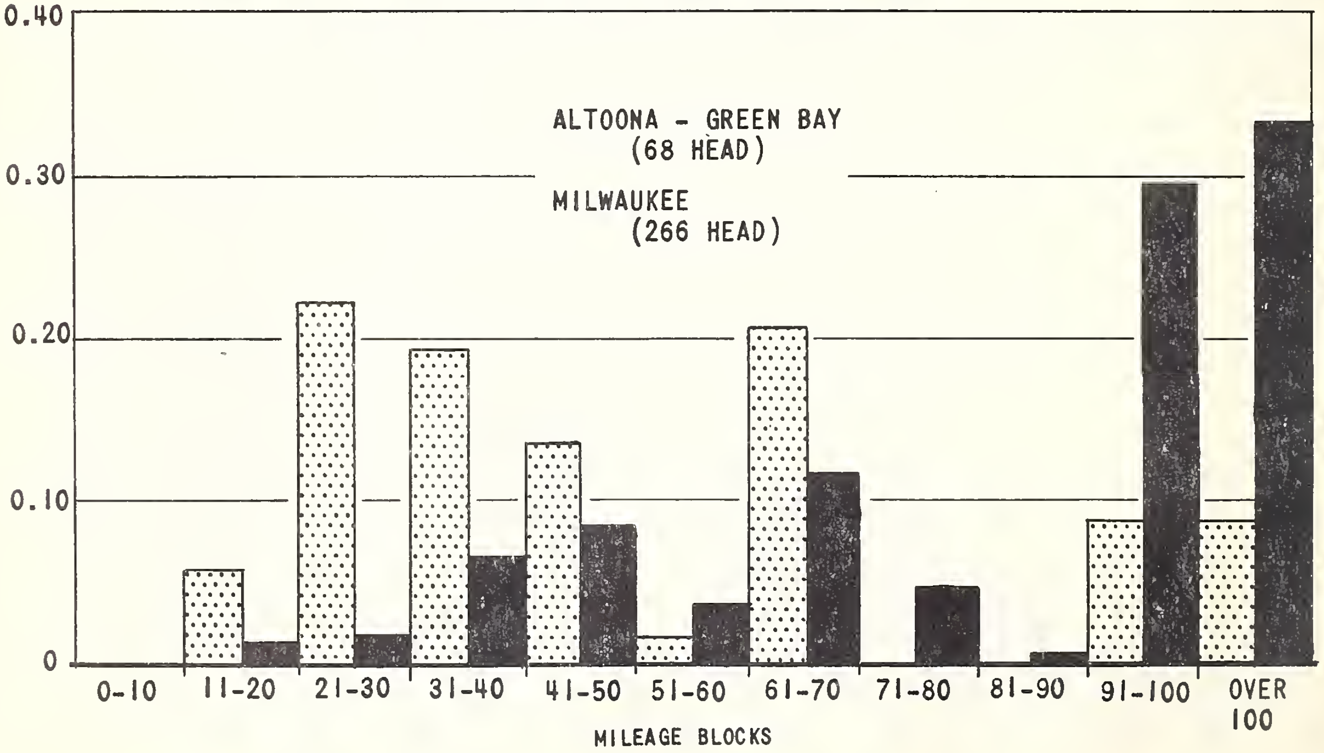
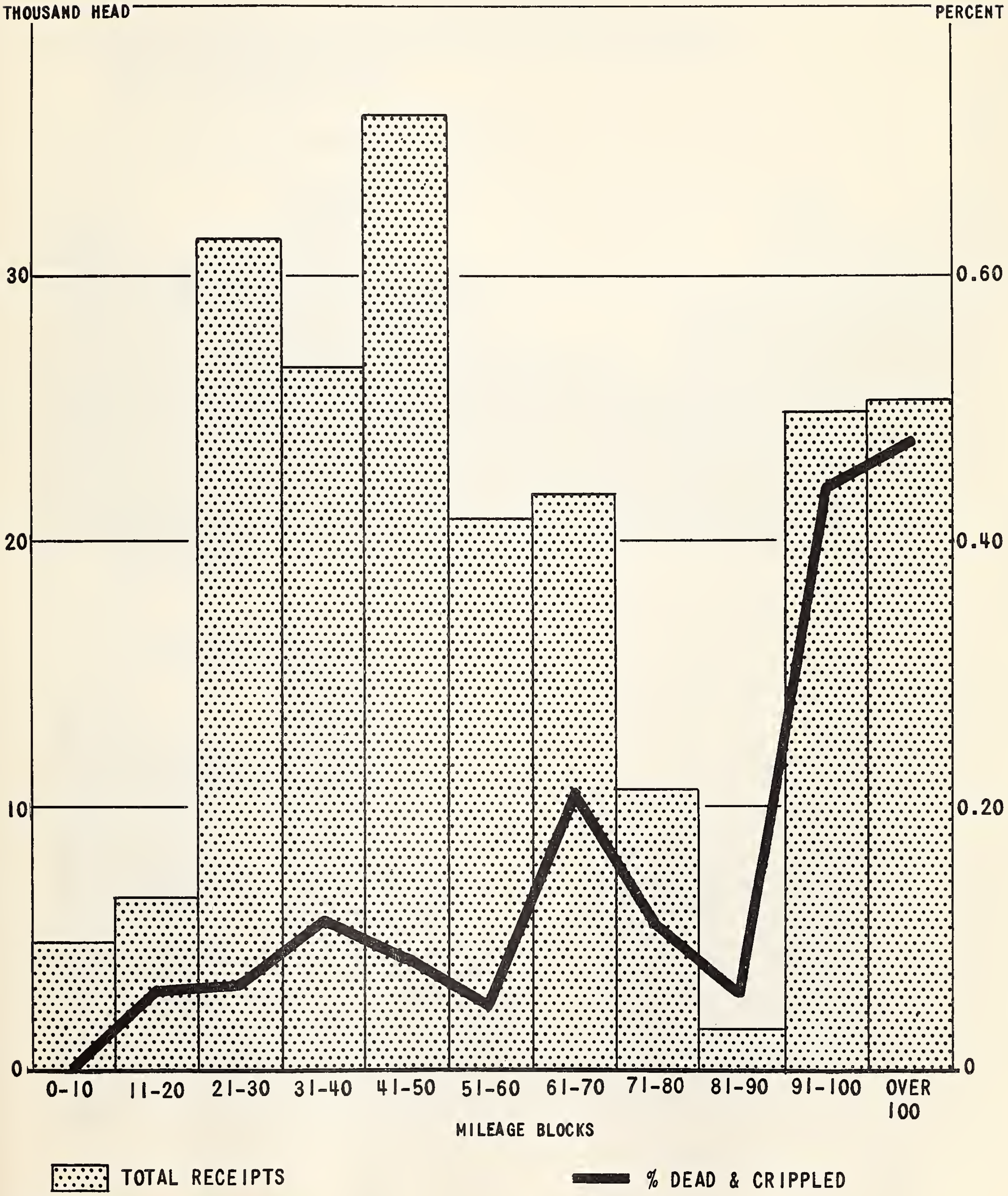


FIGURE 3

COMPARISON OF TOTAL RECEIPTS OF ALL SPECIES OF LIVESTOCK WITH PERCENTAGE DEAD AND CRIPPLED ANIMALS, 1952*



*3 WISCONSIN MARKETS COMBINED

FIGURE 4

COMPARISON BY SPECIES OF PERCENTAGE DEAD AND CRIPPLED LIVESTOCK

(PERCENT OF TOTAL RECEIPTS IN MILEAGE BLOCKS)

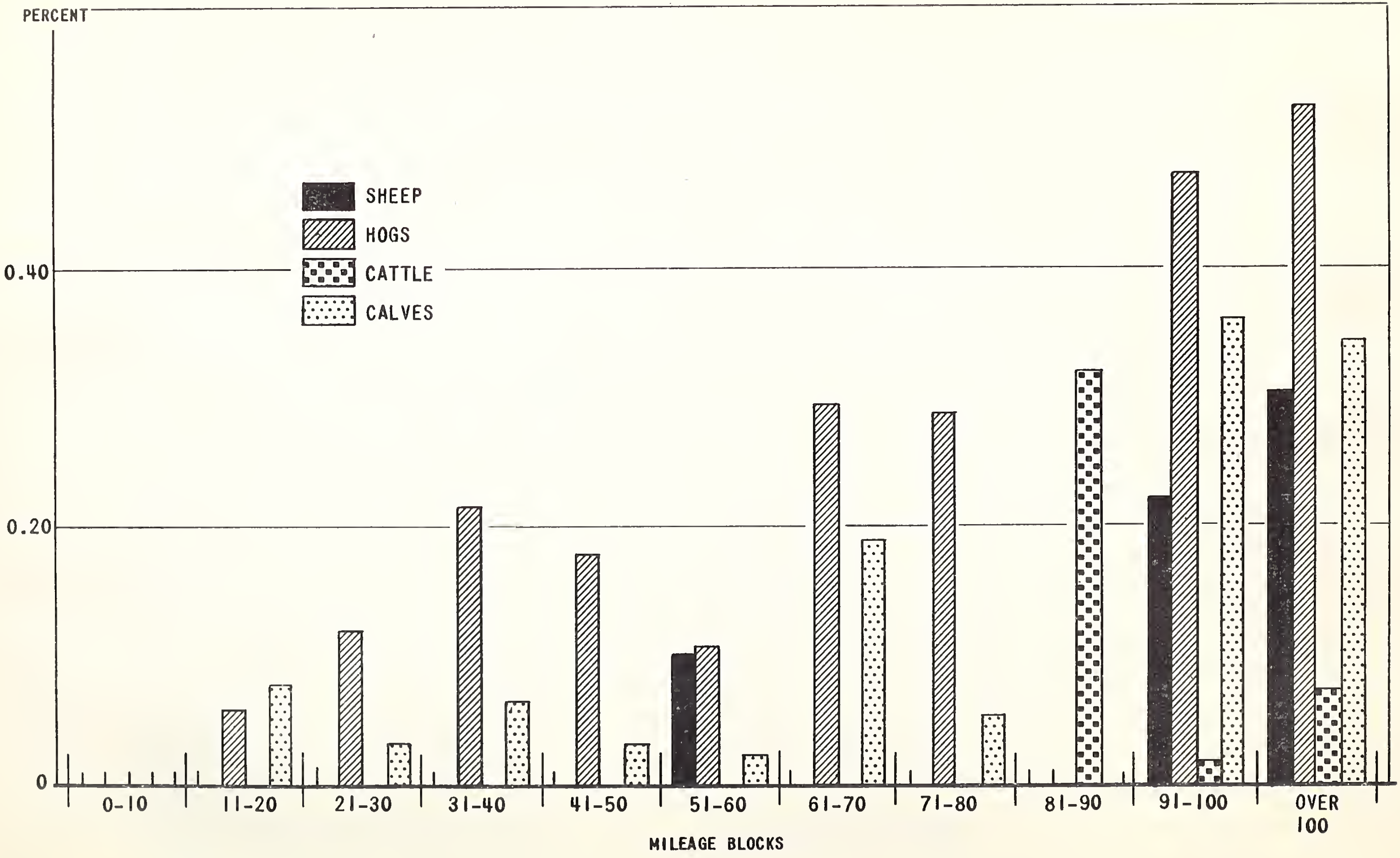
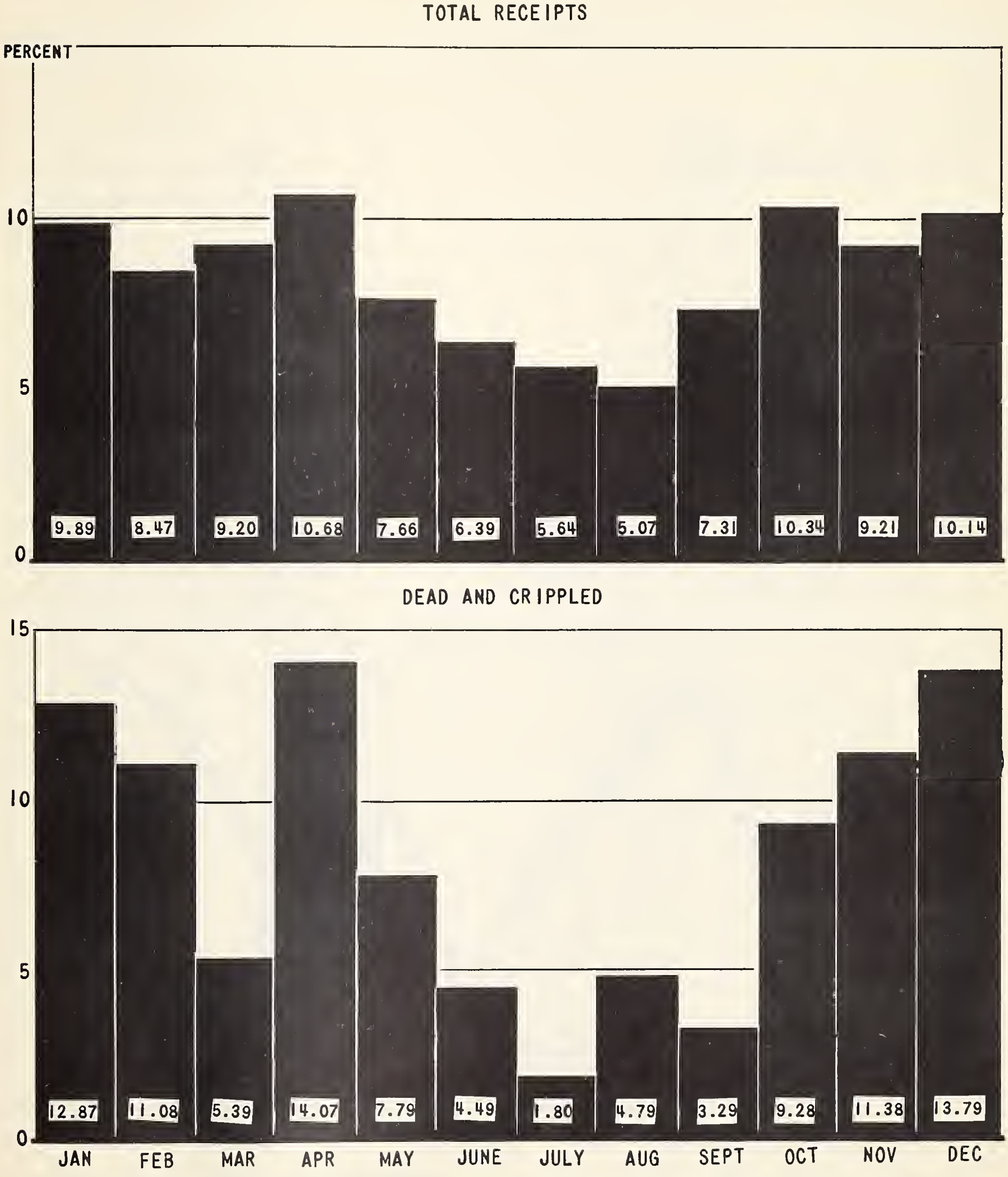


FIGURE 5

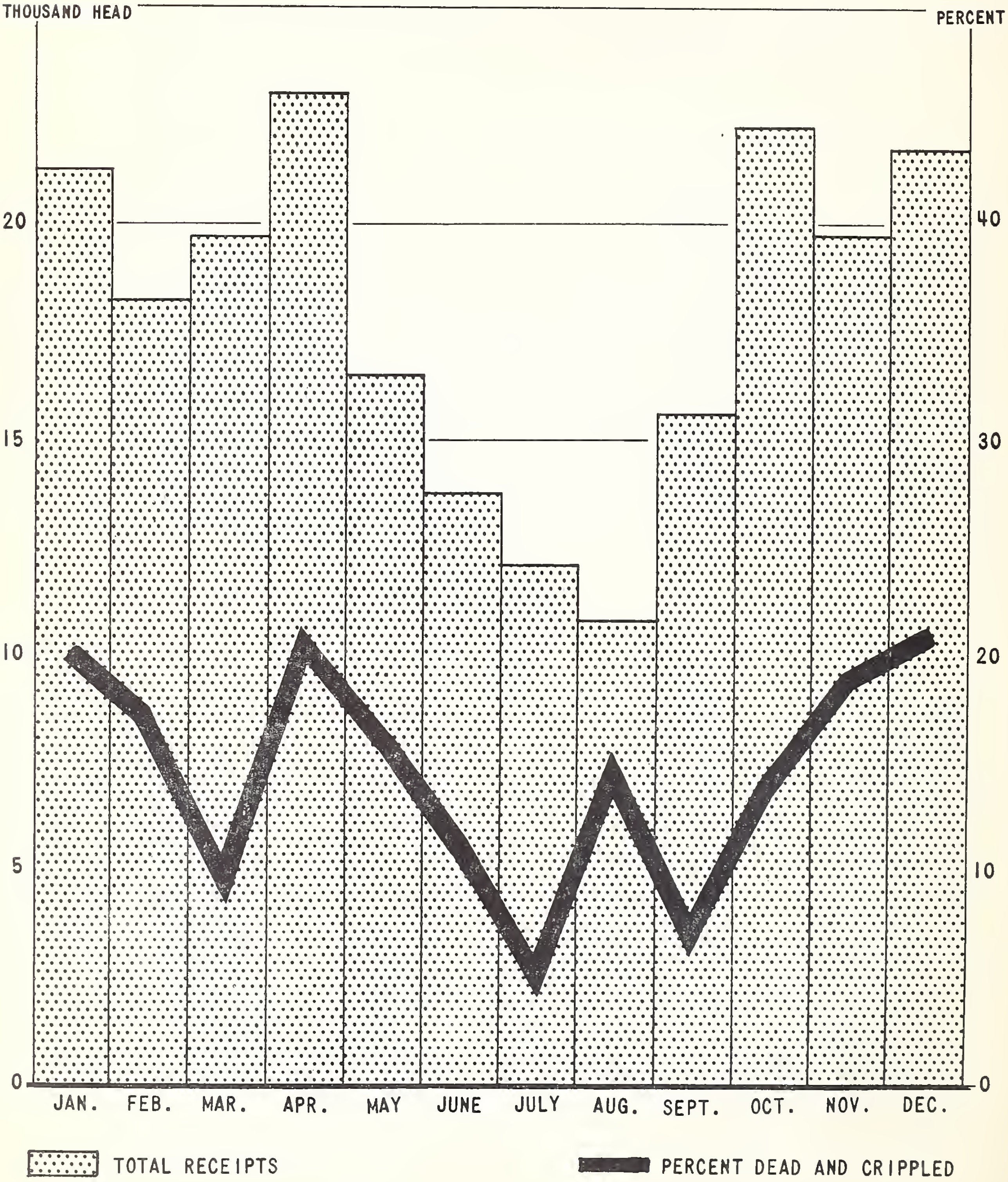
MONTHLY COMPARISON OF TOTAL RECEIPTS OF ALL SPECIES OF LIVESTOCK AND PERCENTAGES OF DEAD AND CRIPPLED ANIMALS - 1952*



*3 WISCONSIN MARKETS COMBINED

FIGURE 6

MONTHLY COMPARISON OF TOTAL RECEIPTS OF ALL SPECIES OF LIVESTOCK AND PERCENTAGE OF DEAD AND CRIPPLED ANIMALS - 1952*



*3 WISCONSIN MARKETS COMBINED

FIGURE 7

COMPARISON BY SPECIES OF PERCENT DEAD AND CRIPPLED ANIMALS REPORTED EACH MONTH, 1952

(3 WISCONSIN MARKETS COMBINED)